

CLAIMS

1. A torque-limiting coupling device comprising two coaxial, generally cylindrical co-acting surfaces (12, 22) on two co-acting parts (10, 20) in the form of a cylindrical sleeve (20) and a cylindrical shaft (10) respectively, wherein the sleeve is in frictional engagement with the shaft for transmission of torque up to a limit that corresponds to the frictional engagement and at which the sleeve begins to rotate relative to the shaft, and further comprises at least one pump means (3) which, upon relative rotation between the sleeve and the shaft, is driven to pump liquid from a liquid storage to a gap (B) between the co-acting surfaces (12, 22), wherein means (41) are provided for carrying away liquid from the gap (B) so as to restore the frictional grip after having exceeded the torque limit, **characterised** in that one part (10) includes a base that has a surface layer (50) which defines one (12) of said co-acting surfaces and which is comprised of a material that has a plasticizing limit which is substantially lower than the plasticizing limit of the material in the co-acting surface (22) of the other part (20).
2. A device according to Claim 1, **characterised** in that the surface layer (50) includes cavities (51) which enables said surface layer to move away from the co-acting surface (22) of said other part upon plasticization.
3. A device according to Claim 2, **characterised** in that the cavities consist of grooves (50) disposed around the circumference and located on the co-acting surface of the surface layer.
4. A device according to any one of Claims 1-3, **characterised** in that the surface layer (50) is comprised of tombak; and in that the co-acting surface of the other part is comprised of steel.
5. A device according to any one of Claims 1-4, **characterised** in that said parts (10, 20) are mutually tensioned radially to establish said friction grip.
6. A device according to any one of Claims 1-5, **characterised** in that the surface layer (50) includes cavities which allow the surface layer to take a radial thickness that is smaller than the radial distance between the surface of the base and the co-acting surface (22) of

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said other part (20) subsequent to plasticization and/or melting of the surface layer (50) and radially relieving the parts (10, 20) of load.

- 5 7. A device according to any one of Claims 1-6, **characterised** in that the surface layers are comprised of a material whose coefficient of thermal expansion is higher than the coefficient thermal expansion of the base.

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